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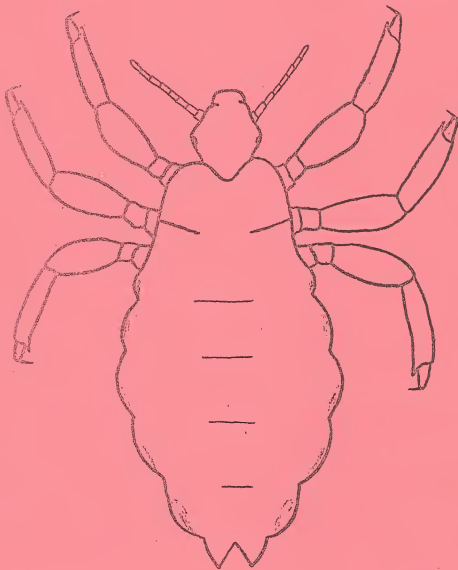
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BIOLOGY, HABITS AND CONTROL

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OF LICE

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## BIOLOGY AND HABITS OF THE HEAD AND BODY LICE

### Pediculus humanus

Sucking lice are flat, wingless, grayish-white insects. Mouthparts are modified for piercing and sucking. One or more pairs of the short, stout legs has a large claw(s) for grasping onto hairs. The immature stages (nymphs) resemble the adults. The eggs (nits) of the head and body lice are yellowish, oval, measure about 0.3 mm by 0.8 mm and have a cap at one end.

Most sucking lice spend their entire life as ectoparasites on mammals. Sucking lice occur only on mammals. One species of lice usually feeds upon only one species of host, one genus, or more rarely, one group of mammals.

Pediculus humanus occurs in two subspecies; the body louse (Pediculus humanus humanus L.) and the head louse (Pediculus humanus capitis DeGeer). Although these forms differ in size, proportion and color, there is an over-lapping of characters. Adults and nymphs of the head louse live on the hair and scalp. They are most prevalent on the back of the neck and behind the ears but are not known to occur on eyebrows or eyelashes. Most body lice will be found on the inner surface of the clothing, especially along seams. The head louse cements eggs to the hair of the scalp, while the body louse normally glues eggs to the fibers of clothing or, less commonly, to body hairs.

The eggs of the head and body lice hatch in about a week. Since hatching is reduced or prevented by temperatures above 100° F or below 75° F, the body louse is readily controlled when clothing is worn intermittently. If clothing is stored for a month, without treatment, all eggs would hatch or die, and any young which hatch would starve to death.

After emerging from the egg, the nymphs go through 3 molts before becoming adults. This takes 8 to 9 days if lice remain in contact with the body, but may take up to 4 weeks when the clothing is removed at night. If the clothes are not worn for 6 to 10 days, nymphs and adults will usually die.

Some adult body lice migrate from the skin to outer garments. Both the head and the body louse can move fairly rapidly and will pass from host to host or host to bedding by simple contact. It is difficult to find head, body or crab lice away from man. Beds occupied every night by insanitary individuals tend to be lousy; if unoccupied for several nights, they tend to be free of lice. Head and body lice may be acquired by personal contact and by putting on infested garments. Head lice may be acquired by contact with upholstered chairs and by using infested brushes and combs. Hairs with eggs attached may be blown about.

Human lice completely depend on human blood for life. During feeding, dark red feces may be passed on the human skin. Infected feces may transfer the typhus rickettsiae to man. Epidemics of typhus have all been associated with infestations of body lice. Typhus is endemic in some cool areas where people wear several layers of clothing and body lice infestations are common.

## BIOLOGY AND HABITS OF THE CRAB LOUSE

Crab lice (Phthirus pubis L.) are small white insects with a short abdomen. The second and third pairs of legs are large (giving them a crab-like appearance). They are most commonly found on hair in the pubic and perianal regions but they may be found on the hairy regions of the chest or arm pits. Infestations of the eyebrows and eyelashes also occur. Crab lice on the eyebrows seem to feed in a localized area, depositing a bluish pigment in the skin above the eyebrows.

Crab lice are spread chiefly by sexual contact, but may be acquired by other means such as from infested toilet seats, beds, and from close personal contact. Small children may become infested with crab lice on their eyebrows or eyelashes from their mothers or through normal play activities.

The life cycle of crab lice is similar to that of head and body lice. The eggs are glued to hairs but are smaller (about 0.6 mm long) than in Pediculus. Crab lice are more sedentary than head or body lice. They settle at one spot grasping hairs with the legs of both sides of the body and taking blood for many hours at a time. The legs are adapted for grasping rather large hairs. The adult prefers rather widely spaced hairs (compared with the dense head hairs). Crab lice survive for only a short time away from the host; usually less than 24 hours.

## CONTROL OF HEAD, BODY AND CRAB LICE

Body, head, and crab lice differ in habits and therefore require different methods of control. Many "over the counter" remedies are not 100 percent effective. Control of lice should be referred to a doctor who, in most cases, will prescribe a special shampoo, lotion or ointment.

### Body Louse Control

Inspection--The body louse rests on the clothing except for a short time on the skin while feeding. The eggs are attached to the fibers of cloth, woolens being preferred. In looking for infestations, examine the clothing along the seams and folds, especially on the inside of the underwear. In heavy infestations, the nits may also be found glued to body hairs.

Control measures--Ordinary laundering, using hot water, will destroy all stages of lice on infested clothing and bedding. Dry cleaning destroys lice on woolen garments. The solvent used in dry cleaning is toxic to lice, and the steam used in pressing makes certain that control is complete. Pressing woolens at home, giving special attention to seams, is also satisfactory. It is important to coordinate laundering or dry cleaning with good hygienic practices. Thorough bathing followed by application of a prescribed ointment or lotion and bathing again in 24 hours is suggested (particularly in cases of heavy infestation).

### Head Louse Control

Inspection--Lice spread rapidly through a family and may be transmitted to people throughout a community. They are the most abundant in children. Girls tend to be more heavily infested by both head and body lice than boys. The eggs (nits) are the easiest stage to detect when inspecting for head lice. They are most commonly glued to the hair, close to the scalp, behind the ear.

Control Measures--A very close hair cut, or shaved scalp was a simple, inexpensive method of controlling head lice. Other methods are often used today. Both the lice and the nits must be destroyed. The following procedure may be used:

1. Shampoo and dry the hair thoroughly.
2. Seat person in a chair with head tilted back and cover eyes with a towel.
3. Apply a formulation prescribed by a physician to hair and scalp. Work it against the nap of the hair, touching all hair and the whole scalp.
4. Comb the hair in the usual manner.
5. After 24 hours, shampoo the hair.
6. Dry, comb, and brush hair to remove dead lice and loosened eggs.

Since upholstered chairs and couches may be a source of infestation by head and body lice (crab lice usually remain attached to hairs), these areas should also be treated. A fog, mist or light spray of pyrethrum will quickly control the lice. Combs and brushes, a source of infestation for head lice, must be cleaned.

Where modern insecticides are not available, as following a civil disaster, it may be necessary to revert to older treatments. In such cases, 2% Lysol or a mixture of kerosene and any bland vegetable oil (1:1) may be used. The hair is thoroughly wet with these mixtures and the head is bound up in a towel for at least an hour.

#### Crab Louse Control

Crab lice are not usually a school health problem, but are important in the general health program and have been a problem in the university system. Although the crab louse has been found to be capable of carrying typhus, there is no indication that it is an important disease vector.

As with head lice, early treatments involved shaving or cutting of the infested hair, but this should not be necessary. In controlling crab lice: bathe thoroughly; apply a preparation prescribed by a physician to all infested areas, ensuring all hair is touched; and, bathe thoroughly again in 24 hours. In recent years pediatricians have requested information regarding the control of crab lice on the eyelashes of young children. One method has been to apply a prescribed ointment containing pyrethrins or other approved chemicals to the eyelashes with a small brush. The insects are removed with fine forceps, having applied cocaine to the conjunctiva if necessary.

People are sensitive about infestations of crab lice. A rumor of an infestation in a large building can do much to disrupt the normal operations and cause a case of panic. These problems must be dealt with quickly and firmly and they will soon be forgotten. The following procedure will bring results:

1. Close all rest rooms one floor at a time. This makes other facilities in the building available during the treatment period.
2. Wash all water closets with a hot solution containing pine oil, creolin, or other odoriferous chemical.
3. Leave mimeographed directions for control and treatment on a table or window sill.
4. Open rest rooms, one floor at a time, and announce to person in charge that treatment is complete.

#### HOW LICE MAY BE AVOIDED

Control of lice is not difficult if people practice the necessary measures. It is of little value to delouse a person and then permit him to be immediately reinfested. Such measures as delousing the entire family, laundering bedding and clothes, and dry cleaning are necessary. Work must be thorough.

Louse control requires public education to be successful. Scrubbing at least once a week will do much to eliminate lice. Hair must be washed often. Clean clothing is very important. People should be able to recognize louse infestations in their families. They should realize the importance of using the proper control measures, followed by a way of life that discourages the louse.



